REMARKS

35 U.S.C. § 103

Claims 2-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over Tokutake (US 5,117,886) and further in view of Sandstrom. The same rejection as applied in the First Office Action has been restated in the Final Office Action. Applicants still object to this rejection for the following reasons.

In order to establish *prima facie* obviousness, there 1) must be some suggestion or motivation in the art to modify or combine the references; 2) must be a reasonable expectation of success and 3) the combined references must teach or suggest all the claim limitations. Graham v. Deere. As discussed further herein, the present rejection lacks suggestion or motivation to combine the references since the combination destroys teachings of either Tokutake or Sandstrom, fails to establish a reasonable expectation of success, and would not inherently result in a run-flat tire with improved cornering as set forth in the rejection, and the combined references fail to teach all of the claimed limitations.

Tokutake discloses a tire with improved vehicle turning performance and cornering power. To achieve these goals, Tokutake teaches that the upper portion of the sidewall must have a decreased rigidity compared to the lower portion of the sidewall (col 7, line 62 – col 8, line 15). This is achieved by multiple construction elements: a) increased reinforcement layers 18, 19 in the inner sidewall portion 8, b) higher carcass turnups, and c) shaping the molded tire to have a maximum section width, at point C, to be radially outward of the mid-sidewall height (col 3, line 20 – col 4, line 12). After inflation of the tire upon the rim, the maximum section width shifts downward, and the outer sidewall portion is deformed in the axially outward direction.

Sandstrom teaches in forming the self-supporting run-flat tire of his invention, when using a single insert, the insert has a maximum thickness at a location approximately radially aligned with the maximum section width of the tire (col 6, lines 11-15). When second and third inserts are used, the maximum thickness of each successive insert is radially higher (col 6, lines 16-24). Sandstrom teaches that the maximum width of the insert is also selected so that the overall thickness in the shoulder is at least 100% of the maximum section width of the sidewall (col 6, lines 33-42).

In the rejection of the claims, it is held that it would have been obvious to one skilled in the art to apply the inserts of Sandstrom to the tire of Tokutake to achieve a self-supporting tire with improved vehicle turning performance and cornering power. However, in applying

the teachings of Sandstrom to the tire Tokutake, one is first confronted with the issue of which maximum section of the tire of Tokutake, as vulcanized or as inflated, to use to determine the location of the maximum section width of the self-supporting insert per Sandstrom's teachings.

If the self-supporting insert is to be placed in the tire of Tokutake relative to the as vulcanized tire, as shown in Figure 1 of Tokutake, the tire will likely have an inside line as seen in Attachment 1. Following the teachings of Sandstrom of a lenticular shaped insert, with the ends tapering from the maximum width, the majority of the insert is located in the radially outer portion 9 of the sidewall and the radially outer portion 9 is increased in stiffness relative to the radially inner portion 8. There is no certainty that the relative stiffness of the inner and outer portions are maintained as desired by Tokutake and is likely to be contrary to the goals of Tokutake. There is no reasonable expectation of success in the combination and one would not inherently achieve a self-supporting tire with improved performance as set forth in the rejection; thus, failing to establish *prima facie* obviousness.

If the self-supporting tire is to be placed in the tire of Tokutake relative to the as inflated tire, as shown in Figure 2 of Tokutake, the tire will likely have an inside line as seen in Attachment 2. Again, following the teachings of Sandstrom of a lenticular shaped insert with ends under the belt edge, it does appear that the insert is equally distributed between the outer and inner sidewall portions 8,9 of Tokutake, maintaining Tokutake's desired relative rigidities between the two sidewall portions. However, the construction is contrary to the teachings of Sandstrom who teachings that the sidewall in the shoulder region of the tire has a thickness at least equal to the tire thickness at the maximum section width. It is well establish that a combination fails to establish *prima facie* obviousness if the combination is contrary to, or teaches away from, the teachings of the prior art applied.

It is also stated in the Office Action that applying the insert of Sandstrom would not alter the relative stiffness of the upper and lower sidewall portions of Tokutake due to the insert shape. Such a balance would only occur if the radial location of the maximum section width of the self-supporting insert, which corresponds to the maximum tire section width per Sandstroms teachings, is also located at the same radial height as the division between the outer and inner sidewall portions 8, 9 of Tokutake. As evident from the teachings of Tokutake, the maximum section width of the tire *never* corresponds to the division between the outer and inner sidewall portions, see Figures 1 and 2. Thus, this Examiner's argument is flawed and contrary to Tokutake.

Thus, one skilled in the art would not seek to provide the tire of Tokutake with self-supporting runflat inserts as the inclusion of such inserts is contrary to the teachings of Tokutake.

In response to Applicant's prior argument of it being contra to conventional thought to form a bead base width greater than the rim width, the teachings of Tokutake are noted. A crucial element of Applicant's argument was ignored – that such tire forming is antithetical for forming *self-supporting run-flat* tires. Due to the requirement for the beads of a self-supporting run-flat tire to stay on the rim during zero pressure operation, it has always been the conventional thought that the bead base width *must* be greater than the rim width, to provide the tire with the extra tension to stay seated on the rim. The present invention is contrary to conventional practice. Simply point to a non run-flat tire construction to show such a construction is known does not negate conventional practice and thought for manufacturing run-flat tires. That such a molded self-supporting run-flat tire would actually work was the surprise to the present inventors as all conventional wisdom is contrary to such a configuration. Because the molding of the bead base width as recited is antithetical to conventional thought and practice, one skilled in the art at the time of the invention was made would not have looked at the tire of Tokutake and found it obvious to use the Tokutake's tire as a base teaching for a self-supporting run-flat tire.

In response to the argument that there is no teaching in either Sandstrom or Tokutake about eliminating stress on the inserts during mounting of the tire as recited, it is asserted that the tire of Tokutake would inherently have such stress reduction. Applicants respectfully disagree. As noted above, first it is uncertain where the insert of Sandstrom is to be placed in the tire of Tokutake. Second, Tokutake teaches that there should be increased tension on the lower sidewall during mounting (col 8, lines 1-15) to achieve the desired goals. An increased tension does NOT, and would not, eliminate stress in the inserts during mounting as an increased tension would inherently create stress in the insert. The Examiner's response is contrary to the explicit teachings of Tokutake.

It is requested that the rejection be reconsidered in light of these arguments. Applicants believe the pending claims are allowable over the cited art and the Examiner is respectfully requested to allow all pending claims.

Respectfully submitted,

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